Nexus Pumpset PF-0,3 /S

Installation Manual

Thank you for choosing a Nexus Pumpset. Through this manual we will help you install your new Nexus product. Please read through this manual carefully before starting your installation.

1 Introduction

The Pumpset should be connected to the boat's hydraulic steering system according to figure 1. The Pumpset motor only operates when carrying out a rudder command. When the boat is on course, the Pumpset stops. A variable speed motor drive adjusts optimal rudder speed and provides for minimum power consumption and maximum rudder positioning accuracy. Most existing multiple station steering systems have lock valves, which automatically isolate stations from each other and from the autopilot Pumpset. A lock valve should be installed so that the helm can be isolated.

2 Installation

Note! Because most installations differ, the following items are not supplied and need to be sourced or made locally: Support bracket for Pumpset, 4 mounting screws and washers, hydraulic fittings and piping.

2.1 Installing the Pumpset

The Pumpset is splashproof and should be mounted in a cool dry location, which minimises hydraulic piping and wiring runs. The enclosed figure indicates the piping required for the different hydraulic steering systems. The Pumpset may be mounted horizontally (Pumpset feet down) or vertically with the pump positioned above the motor. Be certain to leave adequate space to access the bleed screw. Four screws and washers are required to hold the Pumpset resilient feet to the mounting surface. In any case be sure, to mount the pumpset itself or, if not possible, the pumpset-reservoir at the highest position of the hydraulic system.

2.2 Installing hydraulic fittings and piping

It is recommended that all fittings to be installed are aligned with the Pumpset before it is mounted. The type of hydraulic fittings required i.e., straight or 90° angle, will depend on the mounting position of the Pumpset and the location of piping.

Recommended size for all connections are hydraulic hoses and fittings with an inner diameter of 8 mm (0.32”) minimum to reduce the drag.

Use only hydraulic hoses, suitable for a working pressure of 1,000 PSI (70bar). The hydraulic fittings selected must be suitable for the hydraulic hoses size used.

Note! All ports on the Pumpset are 1/4" NPT.

Pipe sealant or teflon tape is required on all male pipe thread fittings. Be certain to keep the sealant or tape at least two threads away from the starting threads to prevent threaded tape or sealant from contaminating the system.

Figure 1: Typical installation on boat with mechanical steering, including Pumpset PF-0,3S with solenoid.

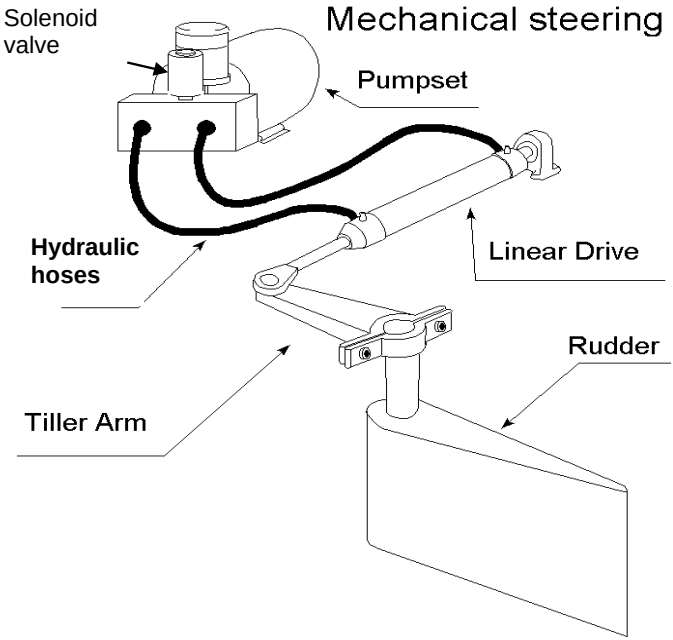
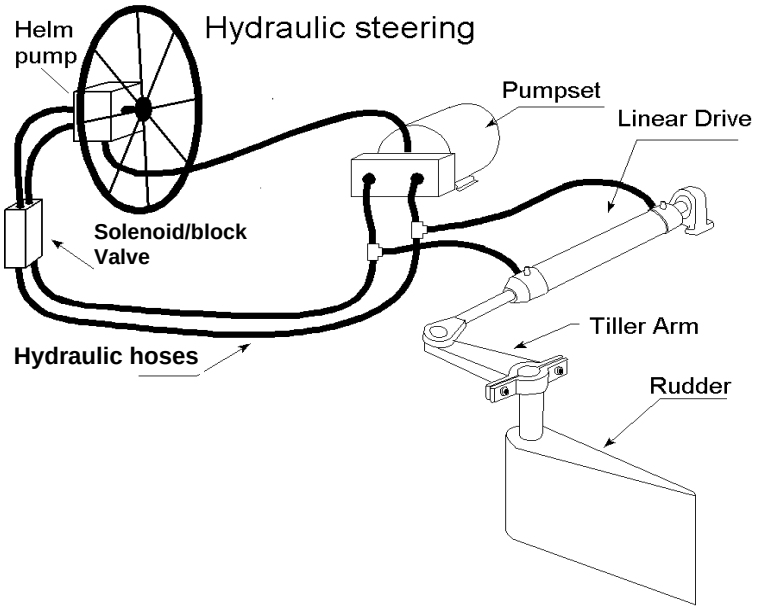


Figure 2: Typical installation on boat with hydraulic steering, including Pumpset PF-03.



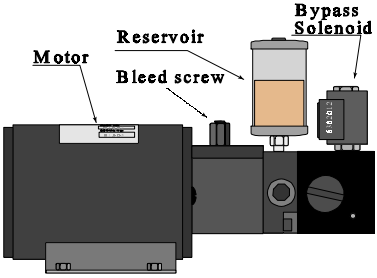
2.3 Pumpset oil filling

If the Pumpset is used together with the Nexus Linear Drive, fill the Linear Drive first and then connect the Linear Drive to the Pumpset before filling the Pumpset. See the Linear Drive oil filling procedure in separate manual.

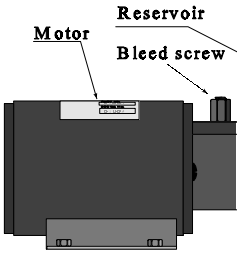
Use hydraulic oil viscosity grade ISO 20. About 110 ml is needed for the Pumpset only without piping. Fill the Pumpset via the reservoir.

Once the boats main steering system has been filled, open the Pumpset bleed screw (on top of the Pumpset), two complete turns. Wait until clear oil void of any air exits from the bleed screw, then resecure the bleed screw. Then fill up the uppermost helm Pumpset or reservoir of the main steering system, if necessary.

Pumpset PF-0,3S with solenoid and reservoir



Pumpset PF-0,3



2.4 Connection

Note! For correct wire dimensions see Nexus Autopilot manual ”Wire Thickness”.

Connect the Pumpset wires to the Nexus Servo Unit as follows:

- Orange wire to Servo Unit terminal marked "MOTOR 1".
- Black wire to Servo Unit terminal marked "MOTOR 2".

For Pumpset PF-0,3S with solenoid, connect also the two red wires as follows:

- One solenoid red wire to terminal marked 16 ”+”.
- One solenoid red wire to terminal marked 17 "GND".

It does not matter which wire red wire goes to which terminal.

3 Dockside testing

When the complete electrical installation is checked and the power is turned on, there are further procedures to be carried out in order to completely remove any air in the system. See 12 "Dockside Testing" of the Nexus Autopilot manual.

4 Maintenance and inspection schedule

If the boat does not accumulate the hours indicated below within 3 months, the frequency is every 3:rd month.

Warning !

Failure to rectify any faulty conditions discovered as a result of the inspection could cause sudden loss of Autopilot control, with consequential danger. It is recommended that all items referenced in the following table be inspected before commencing any cruise.

Type	Equipment:	Check for:	Remedy:	Inspection Frequency:
Hydraulic	Oil reservoir level	Correct	Fill	200 hrs
	Oil condition	Discoloration Contamination	Flush system and replace the oil	1000 hrs 1000 hrs
	Hydraulic hoses	Damage Leaks & Corrosion	Replace	1000 hrs
	Hydraulic fittings	Damage Leaks & Loosening	Replace Tighten	500 hrs
	Piston rod seals on pumpset	Leaking	Replace	1000 hrs
Mechanical	Linear drive	Corrosion	Replace or Repair	2000 hrs
	Tiller arm	Corrosion	Replace	2000 hrs
	Tiller bolts	Corrosion Loosening	Replace Tighten	2000 hrs 500 hrs
	Rod end bolt on linear drive	Corrosion Loosening	Replace Tighten	2000 hrs 500 hrs
	Trunnion bolts on linear drive	Corrosion Loosening	Replace Tighten	2000 hrs 500 hrs

5 Specifications

Type of Pumpset:	Reversible axial piston pump, 5-cylinder
Dimensions:	Length 230 x width 105 x height 100 mm (91 x 41 x 40”)
Weight PF-0,3 (without oil):	3 kg (6.60 lb)
Weight PF-0,3S (without oil):	3,3 kg (7.27 lb)
Enclosure:	Splash proof
Temperature range:	-5° to +50° C (+40° to 122° F)
Power supply:	Both Pumpsets available in 12 or 24 V DC
Peak pressure:	70 bar (1000PSI)
Ram capacity min - max:	100 - 400 cc (6 - 24 in3) (no load)
Peak flow rate:	1150 cc/min (70 in3/min) (no load)
Average power consumption:	2 - 4 A ca 36 Watts (at 12V)
Piping pressure:	1000 PSI (70bar)
Piping size:	Min. 8 mm (0.32”) inner diameter
Port dimensions:	¼" NPT
Hydraulic oil viscosity:	ISO 20
Warranty period:	2 years, see separate conditions

CE approval: The product conforms to the EMC requirements for immunity and emission according to EN 5008-1 and EN 55022

6 Warranty

GENERAL

All our products are designed and built to comply to the highest class industry standards. If the products are correctly installed, maintained and operated, as described in the installation and operation manual, they will provide long and reliable service. Our international Network of distributors can provide you with the information and assistance you may require virtually anywhere in the world.
Please read through and fill in this warranty card and send it to your national distributor for product registration.

LIMITED WARRANTY

The warranty covers repair of defective parts due to faulty Manufacturing and includes labour when repaired in the country of purchase. The warranty period is stated in the product manual, and commences from the date of purchase. The above warranty is the Manufacturer's only warranty and no other terms, expressed or implied, will apply. The Manufacturer specifically excludes the implied warranty of merchantability and fitness for a particular purpose.

CONDITIONS

- The supplied warranty card and receipt with proof of purchase date, must be shown to validate any warranty claim. Claims are to be made in accordance with the claims procedure outlined below.
- The warranty is non-transferrable and extends only to the original purchaser.
- The warranty does not apply to Products from which serial numbers have been removed, faulty installation or incorrect fusing, to conditions resulting from improper use, external causes, including service or modifications not performed by the Manufacturer or by its national distributors, or operation outside the environmental parameters specified for the Product.
- The Manufacturer will not compensate for consequential damage caused directly or indirectly by the malfunction of its equipment. The Manufacturer is not liable for any personal damage caused as a consequence of using its equipment.
- The Manufacturer, its national distributors or dealers are not liable for charges arising from sea trials, installation surveys or visits to the boat to attend to the equipment, whether under warranty or not. The right is reserved to charge for such services at an appropriate rate.
- The Manufacturer reserves the right to replace any products returned for repair, within the warranty period, with the nearest equivalent, if repair within a reasonable time period should not be possible.
- The terms and conditions of the warranty as described do not affect your statutory rights.

CLAIMS PROCEDURE

Equipment should be returned to the national distributor, or one of its appointed dealers, in the country where it was originally purchased. Valid claims will then be serviced and returned to the sender free of charge.

Alternatively, if the equipment is being used away from the country of purchase, it may be returned to the national distributor, or one of its appointed dealers, in the country where it is being used. In this case valid claims will cover parts only. Labour and return postage will be invoiced to the sender at an appropriate rate.

DISCLAIMER

Common sense must be used at all times when navigating and the Manufacturer's navigation equipment should only be considered as aids to navigation.
The Manufacturers policy of continuous improvement may result in changes to product specification without prior notice.

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12V PF-0,3S (21341), 24V PF-0,3S (21341-24)
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